1. (Currently Amended) An equipment fan, comprising

a housing ~~(12)~~ radially surrounding

a fan wheel ~~(22; 122)~~, said housing having an inner side ~~(17)~~ which defines an air conveying conduit ~~(16)~~ in which said fan wheel is arranged, said fan wheel ~~(22; 122)~~ being rotatable about a central axis ~~(25)~~ and including a central hub ~~(20; 120)~~ having an outer periphery ~~(27; 127)~~ on which are mounted fan blades ~~(26; 126)~~ whose radially outer rims ~~(40; 140)~~ are each at a distance (d) from the adjacent inner side ~~(17)~~ of the fan housing ~~(12)~~,

wherein each of said blades ~~(26; 126)~~ is shaped like an airfoil profile of an aircraft, the blades each being implemented in concave and sickle-shaped fashion on their front edge ~~(128)~~, in such a way that a radially outer end ~~(130)~~ of a sickle ~~(128)~~ is located, with reference to a rotation direction ~~(124)~~ of said fan wheel, farther forward in a circumferential direction than a hub-side end ~~(132)~~ of the sickle ~~(128)~~, and the blades are furthermore each twisted between said hub-side end and said radially outer end and have a convex rear edge ~~(136)~~, and along the twisted radial outer edge ~~(40; 140)~~ of each fan blade ~~(26; 126)~~ and adjacently to the inner side ~~(17)~~ of the external housing ~~(12)~~,

a flow element ~~(42; 142)~~ is provided which has an outline analogous to that of the associated fan blade ~~(26; 126)~~ and which is implemented as a flow-pattern obstacle for a compensating flow proceeding around that twisted radial outer edge ~~(40; 140)~~ from the delivery side to the intake side, in order to reduce noise generated during operation by the equipment fan ~~(10)~~, and

wherein the flow elements each have a profile that, adjacent a front edge of a fan blade, increases from that front edge in the manner of the front edge of an airfoil, and tapers adjacent a rear edge in the manner of the rear edge of an airfoil.

2. (Currently Amended) The fan according to claim 1, wherein said external housing ~~(12)~~ is formed with at least one strut ~~(18)~~ extending transversely to the air conveying conduit ~~(16)~~,

and the rear edge ~~(36; 136)~~ of the blades ~~(26; 126)~~ is implemented convexly, in such a way that, upon rotation of the fan wheel ~~(22; 122)~~, each rear edge ~~(36; 136)~~, viewed in plan, intersects that strut ~~(18)~~ at different locations at successive points in time.

3. (Currently Amended) The fan according to claim 2,

wherein the convex rear edge ~~(36; 136)~~ is implemented with grazing intersections.

4. (Currently Amended) The fan according to claim 1,

wherein the concavely sickle-shaped front edge ~~(128)~~ has a region ~~(132)~~ that lags the most, with reference to the rotational motion ~~(124)~~, which region is located substantially at the transition from the hub ~~(120)~~ to the front edge ~~(128)~~ of the relevant blade ~~(126)~~.

5. (Currently Amended) The fan according to claim 1,

wherein the concavely sickle-shaped front edge ~~(128)~~ encloses, with the region of the hub ~~(120)~~ located in front of the relevant blade ~~(126)~~, an angle (alpha) that is equal to approximately 90° or less.

6. (Currently Amended) The fan according to claim 1, wherein

the blade ~~(126)~~ is twisted in such a way that it has a thread pitch which is greater at the hub ~~(120)~~ than near radially outer edges ~~(140)~~ of the blade.

7. (Currently Amended) The fan according to claim 1,

wherein the fan blades ~~(126)~~ each have, viewed in a sagittal section, a profile that corresponds approximately to an airfoil profile.

8. (Currently Amended) The fan according to claim 1,

wherein the respective flow elements ~~(142)~~ extend at least locally on both a delivery side of the fan and an intake side of the fan, along respective radially outer rims ~~(140)~~ of the fan blades ~~(126)~~.

9. (CANCELLED)

PLEASE REWRITE CLAIM 10 IN INDEPENDENT FORM:

10. (Currently Amended) ~~The fan according to claim 1,~~

An equipment fan, comprising

a housing radially surrounding a fan wheel, said housing having an inner side which defines an air conveying conduit in which said fan wheel is arranged, said fan wheel being rotatable about a central axis and including a central hub having an outer periphery on which are mounted fan blades whose radially outer rims are each at a distance (d) from the adjacent inner side of the fan housing,

wherein each of said blades is shaped like an airfoil profile of an aircraft,

the blades each being implemented in concave and sickle-shaped fashion on their front edge, in such a way that a radially outer end of a sickle is located, with reference to a rotation direction of said fan wheel, farther forward in a circumferential direction than a hub-side end of the sickle, and the blades are furthermore each twisted between said hub-side end and said radially outer end and have a convex rear edge, and along the twisted radial outer edge of each fan blade and adjacently to the inner side of the external housing,

a flow element is provided which has an outline analogous to that of the associated fan blade and which is implemented as a flow-pattern obstacle for a compensating flow proceeding around that twisted radial outer edge from the delivery side to the intake side, in order to reduce noise generated during operation by the equipment fan, and

wherein the fan blades ~~(26, 126)~~, viewed in a radial section, are shaped convexly toward the intake side, and transition at least over a part of their extension, in their radially outer region, with a radius of curvature, into a portion of the associated flow element ~~(42, 142)~~ projecting toward the intake side.

PLEASE REWRITE CLAIM 11 IN INDEPENDENT FORM:

11. (Currently Amended) ~~The fan according to claim 1,~~

An equipment fan, comprising

a housing radially surrounding a fan wheel, said housing having an inner side which defines an air conveying conduit in which said fan wheel is arranged, said fan wheel being rotatable about a central axis and including a central hub having an outer periphery on which are mounted fan blades whose radially outer rims are each at a distance (d) from the adjacent inner side of the fan housing,

wherein each of said blades is shaped like an airfoil profile of an aircraft,

the blades each being implemented in concave and sickle-shaped fashion on their front edge, in such a way that a radially outer end of a sickle is located, with reference to a rotation direction of said fan wheel, farther forward in a circumferential direction than a hub-side end of the sickle, and the blades are furthermore each twisted between said hub-side end and said radially outer end and have a convex rear edge, and along the twisted radial outer edge of each fan blade and adjacently to the inner side of the external housing,

a flow element is provided which has an outline analogous to that of the associated fan blade and which is implemented as a flow-pattern obstacle for a compensating flow proceeding around that twisted radial outer edge from the delivery side to the intake side, in order to reduce noise generated during operation by the equipment fan, and

wherein the fan blades ~~(26, 126)~~, viewed in a radial section, are shaped concavely toward an air delivery side of the fan, and transition at least over a part of their extension, with their radially outer rim, with a radius of curvature, into a portion of the associated flow element ~~(42, 142)~~ projecting toward the delivery side.

PLEASE CANCEL CLAIM 20 AND INCORPORATE INTO CLAIM 12:

12. (Currently Amended) A fan comprising:

an air conveying conduit ~~(16)~~ and a fan wheel ~~(22; 122)~~ arranged therein, which wheel is rotatable about a central axis ~~(25)~~ and is formed with a central hub ~~(20; 120)~~ having an outer periphery ~~(27; 127)~~ on which are mounted fan blades ~~(26; 126)~~ that extend with their radially outer rims ~~(40; 140)~~ as far as a surface ~~(17)~~ that is substantially coaxial with the central axis ~~(25)~~ and delimits the air conveying conduit ~~(16)~~ externally,

which blades ~~(26; 126)~~ each have a profile that is shaped like the airfoil profile of an aircraft,

there being provided, along the radial outer edge ~~(40; 140)~~ of the fan blades ~~(26; 126)~~, a respective flow element ~~(42; 142)~~ that is implemented as a flow-pattern obstacle for a compensating flow proceeding around that radial outer edge ~~(40; 140)~~ from the delivery side to the intake side, which flow element ~~(42; 142)~~ is likewise cross-sectionally shaped substantially like an airfoil profile, and has, adjacent its front edge ~~(28; 128)~~ and the rear edge ~~(36; 136)~~ of a blade ~~(26; 126)~~ substantially the same outline as the adjacent part of the associated blade ~~(26; 126)~~,

and in a middle region ~~(48)~~ between the front and back edge is wider, by an approximately constant amount, than the adjacent part of the blade ~~(26; 126)~~ and

wherein the fan blades, viewed in a radial section, are implemented convexly toward the intake side, and transition at least over a portion of their extension, in their radially outer region, with a radius of curvature, into a portion of the associated flow element projecting toward the intake side.

13. (Currently Amended) The fan according to claim 12,

wherein, in a transition region between the front edge ~~(28; 128)~~ and middle region ~~(48)~~, a ratio of the axial extension of the flow element ~~(42; 142)~~ to the axial extension (D) of the adjacent blade ~~(26)~~ increases in the direction away from the front edge ~~(28; 128)~~.

14. (Currently Amended) The fan according to claim 12,

wherein, in a transition region between the rear edge ~~(36; 136)~~ and middle region ~~(48)~~, a ratio of the axial extension of the flow element ~~(42; 142)~~ to the axial extension (D) of the adjacent blade ~~(26; 126)~~ increases in the direction away from the rear edge ~~(36; 136)~~.

15. (Currently Amended) The fan according to claim 12,

wherein the flow elements ~~(42; 142)~~ extend, at least locally, on both sides, i.e. on the delivery and intake sides, along the radially outer rim of the fan blades ~~(26; 126)~~.

16. (Currently Amended) The fan according to claim 12, wherein

each of said blades ~~(26; 126)~~ has a front edge ~~(128)~~ which is concave and sickle-shaped, so that, defining forward with respect to a rotation direction of the fan,

a radially outer end ~~(130)~~ of a sickle projects further forward than does a hub-adjacent end ~~(132)~~ of the sickle ~~(128)~~.

17. (Currently Amended) The fan according to claim 12,

wherein the blades ~~(26; 126)~~ are each twisted in such a way that their pitch at the hub ~~(20; 120)~~ is greater than the pitch in the region of the radially outer edge ~~(40; 140)~~.

18. (Currently Amended) The fan according to claim 12,

wherein the blades ~~(26; 126)~~ are implemented in the region of the rear edge convexly and with grazing intersections.

19. (Currently Amended) The fan according to claim 12, which comprises an external housing ~~(12)~~ from which there extends away at least one strut ~~(18)~~ proceeding transversely to the air conveying conduit ~~(16)~~,

and the rear edge ~~(36; 136)~~ of the blades ~~(26; 126)~~ is implemented convexly in such a way that, upon rotation of the fan wheel ~~(22; 122)~~, that rear edge ~~(36; 136)~~, viewed in plan, intersects that strut ~~(18)~~ at different locations at successive points in time.

20. (Cancelled)

PLEASE REWRITE CLAIM 21 IN INDEPENDENT FORM:

21. (Currently Amended) ~~The fan according to claim 12,~~

A fan comprising:

an air conveying conduit and a fan wheel arranged therein, which wheel is rotatable about a central axis and is formed with a central hub having an outer periphery on which are mounted fan blades that extend with their radially outer rims as far as a surface that is substantially coaxial with the central axis and delimits the air conveying conduit externally,

which blades each have a profile that is shaped like the airfoil profile of an aircraft,

there being provided, along the radial outer edge of the fan blades, a respective flow element that is implemented as a flow-pattern obstacle for a compensating flow proceeding around that radial outer edge from the delivery side to the intake side,

which flow element is likewise cross-sectionally shaped substantially like an airfoil profile, and has, adjacent its front edge and the rear edge of a blade substantially the same outline as the adjacent part of the associated blade,

and in a middle region between the front and back edge is wider, by an approximately constant amount, than the adjacent part of the blade and

wherein the fan blades ~~(26; 126)~~, viewed in a radial section, are curved concavely toward a delivery side of the fan, and transition at least over a portion of their extension, with their radially outer rim, with a radius of curvature, into a portion of the associated flow element ~~(42; 142)~~ projecting toward the delivery side of the fan.

PLEASE REWRITE CLAIM 22 IN INDEPENDENT FORM:

22. (Currently Amended) ~~The fan according to claim 12,~~

A fan comprising:

an air conveying conduit and a fan wheel arranged therein, which wheel is rotatable about a central axis and is formed with a central hub having an outer periphery on which are mounted fan blades that extend with their radially outer rims as far as a surface that is substantially coaxial with the central axis and delimits the air conveying conduit externally,

which blades each have a profile that is shaped like the airfoil profile of an aircraft,

there being provided, along the radial outer edge of the fan blades, a respective flow element that is implemented as a flow-pattern obstacle for a compensating flow proceeding around that radial outer edge from the delivery side to the intake side,

which flow element is likewise cross-sectionally shaped substantially like an airfoil profile, and has, adjacent its front edge and the rear edge of a blade substantially the same outline as the adjacent part of the associated blade,

and in a middle region between the front and back edge is wider, by an approximately constant amount, than the adjacent part of the blade,

wherein said fan ~~which~~ is implemented as a diagonal fan,

and wherein the flow elements ~~(42; 142)~~ are provided only on the intake side of the blades ~~(26; 126)~~.

Please add new claims dependent upon now-independent claim 10:

23. (New) The fan according to claim 10, wherein said external housing is formed with at least one strut extending transversely to the air conveying conduit, and

the rear edge of the blades is implemented convexly, in such a way that, upon rotation of the fan wheel, each rear edge, viewed in plan, intersects that strut at different locations at successive points in time.

24. (New) The fan according to claim 23, wherein

the convex rear edge is implemented with grazing intersections.

25. (New) The fan according to claim 10, wherein

the concavely sickle-shaped front edge has a region that lags the most, with reference to the rotational motion, which region is located substantially at the transition from the hub to the front edge of the relevant blade.

26. (New) The fan according to claim 10, wherein

the concavely sickle-shaped front edge encloses, with the region of the hub located in front of the relevant blade, an angle (alpha) that is equal to approximately 90° or less.

27. (New) The fan according to claim 10, wherein

the blade is twisted in such a way that it has a thread pitch which is greater at the hub than near radially outer edges of the blade.

28. (New) The fan according to claim 10, wherein

the fan blades each have, viewed in a sagittal section,

a profile that corresponds approximately to an airfoil profile.

29. (New) The fan according to claim 10,

wherein the respective flow elements ~~(142)~~ extend at least locally on both a delivery side of the fan and an intake side of the fan, along respective radially outer rims ~~(140)~~ of the fan blades ~~(126)~~.

30. (New) The fan according to claim 10, wherein

the flow elements each have a profile that,

adjacent a front edge of a fan blade, increases from that front edge in the manner of the front edge of an airfoil,

and tapers adjacent a rear edge

in the manner of the rear edge of an airfoil.

Please add claims dependent upon now-independent claim 11:

31. (New) The fan according to claim 11, wherein

said external housing is formed with at least one strut extending transversely to the air conveying conduit,

and the rear edge of the blades is implemented convexly, in such a way that, upon rotation of the fan wheel, each rear edge, viewed in plan, intersects that strut at different locations at successive points in time.

32. (New) The fan according to claim 31, wherein

the convex rear edge is implemented with grazing intersections.

33. (New) The fan according to claim 11,

wherein the concavely sickle-shaped front edge has a region that lags the most, with reference to the rotational motion, which region is located substantially at the transition from the hub to the front edge of the relevant blade.

34. (New) The fan according to claim 11, wherein

the concavely sickle-shaped front edge encloses, with the region of the hub located in front of the relevant blade,

an angle (alpha) that is equal to approximately 90° or less.

35. (New) The fan according to claim 11, wherein

the blade is twisted in such a way that it has a thread pitch which is greater at the hub than near radially outer edges of the blade.

36. (New) The fan according to claim 11, wherein

the fan blades each have, viewed in a sagittal section, a profile that corresponds approximately to an airfoil profile.

37. (New) The fan according to claim 11, wherein

the respective flow elements extend at least locally on both a delivery side of the fan and an intake side of the fan, along respective radially outer rims of the fan blades.

38. (New) The fan according to claim 11, wherein

the flow elements each have a profile that, adjacent a front edge of a fan blade, increases from that front edge in the manner of the front edge of an airfoil,

and tapers adjacent a rear edge in the manner of the rear edge of an airfoil.

39. (New) The fan according to claim 11, wherein

the fan blades, viewed in a radial section, are implemented convexly toward the intake side, and transition at least over a portion of their extension, in their radially outer region, with a radius of curvature, into a portion of the associated flow element projecting toward the intake side.

Please add new claims dependent upon now-independent claim 21:

40. (New) The fan according to claim 21, wherein,

in a transition region between the front edge and middle region, a ratio of the axial extension of the flow element to the axial extension (D) of the adjacent blade increases in the direction away from the front edge.

41. (New) The fan according to claim 21, wherein,

in a transition region between the rear edge and middle region, a ratio of the axial extension of the flow element to the axial extension (D) of the adjacent blade increases in the direction away from the rear edge.

42. (New) The fan according to claim 21, wherein

the flow elements extend, at least locally, on both sides, i.e. on the delivery and intake sides, along the radially outer rim of the fan blades.

43. (New) The fan according to claim 21, wherein

each of said blades has a front edge which is concave and sickle-shaped, so that, defining forward with respect to a rotation direction of the fan,

a radially outer end of a sickle projects further forward than does a hub-adjacent end of the sickle.

44. (New) The fan according to claim 21,

wherein the blades are each twisted in such a way that their pitch at the hub is greater than the pitch in the region of the radially outer edge.

45. (New) The fan according to claim 21, wherein the blades are implemented in the region of the rear edge convexly and with grazing intersections.

46. (New) The fan according to claim 21, which comprises

an external housing from which there extends away at least one strut proceeding transversely to the air conveying conduit,

and the rear edge of the blades is implemented convexly in such a way that, upon rotation of the fan wheel, that rear edge, viewed in plan, intersects that strut at different locations at successive points in time.

47. (New) The fan according to claim 21, wherein

the fan blades, viewed in a radial section, are implemented convexly toward the intake side, and transition at least over a portion of their extension, in their radially outer region, with a radius of curvature, into a portion of the associated flow element projecting toward the intake side.

Please add claims dependent upon now-independent claim 22:

48. (New) The fan according to claim 22, wherein,

in a transition region between the front edge and middle region, a ratio of the axial extension of the flow element to the axial extension (D) of the adjacent blade increases in the direction away from the front edge.

49. (New) The fan according to claim 22, wherein,

in a transition region between the rear edge and middle region, a ratio of the axial extension of the flow element to the axial extension (D) of the adjacent blade increases in the direction away from the rear edge.

50. (New) The fan according to claim 22, wherein

the flow elements extend, at least locally, on both sides, i.e. on the delivery and intake sides, along the radially outer rim of the fan blades.

51. (New) The fan according to claim 22, wherein

each of said blades has a front edge which is concave and sickle-shaped, so that, defining forward with respect to a rotation direction of the fan,

a radially outer end of a sickle projects further forward than does a hub-adjacent end of the sickle.

52. (New) The fan according to claim 22,

wherein the blades are each twisted in such a way that their pitch at the hub is greater than the pitch in the region of the radially outer edge.

53. (New) The fan according to claim 22,

wherein the blades are implemented in the region of the rear edge convexly and with grazing intersections.

54. (New) The fan according to claim 22, which comprises

an external housing from which there extends away at least one strut proceeding transversely to the air conveying conduit,

and the rear edge of the blades is implemented convexly in such a way that, upon rotation of the fan wheel, that rear edge, viewed in plan, intersects that strut at different locations at successive points in time.

55. (New) The fan according to claim 22, wherein

the fan blades, viewed in a radial section, are implemented convexly toward the intake side, and transition at least over a portion of their extension, in their radially outer region, with a radius of curvature, into a portion of the associated flow element projecting toward the intake side.

56. (New) The fan according to claim 22, wherein

the fan blades, viewed in a radial section, are curved concavely toward a delivery side of the fan, and transition at least over a portion of their extension, with their radially outer rim, with a radius of curvature, into a portion of the associated flow element projecting toward the delivery side of the fan.